Secvh. II-67—200,000—21-5-58.

# Health (195 / ) Department.

Mg **SERIES**

**G.O. No.** 843

**Dated** 14 3 - 1954

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**[Despatch Abstract.]**

Radium Custody, issue and use - Rules

Re issued

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HEALTH DEPARTMENT

# G.O. No. 843, 14th March 1951

Radium—Custody, issue and use—Rules—Re-issued.

READ—the following papers :—

G.O. No. 570, P.H., dated 11th February 1938.

G.O. Ms. No. 3255, P.H., dated 13th November 1946.

G.O. Ms. No. 2639, P.H., dated 25th July 1949.

G.O. Ms. No. 2363, Health, dated 29th June 1950.

From the Surgeon-General, dated 20th December 1949, No. 29579-13-P.W.

From the Surgeon-General, dated 29th November 1950, No. 29579-37-G-2.

From the Deputy Surgeon-General, dated 29th December 1950, D.O. No. 29579-38-G-2.

From the Deputy Surgeon-General, dated 16th January 1951, D.O. No. Nil.

**Order—No. 843, Health, dated 14th March 1951.**

In supersession of the rules issued with G.O. No. 570, P.H., dated 11th February 1938, as subsequently amended from time to time, the Government issue the revised rules shown in the annexure to this order in regard to the safe custody, issue and use of radium in Government hospitals. These rules should be observed to the letter.

(By order of His Excellency the Governor)

T. M. S. MANI,
*Secretary to Government.*

To the Surgeon-General.
" Accountant General.
" Finance Department.

## ANNEXURE.

RULES REGARDING THE SAFE CUSTODY, ISSUE AND USE OF RADIUM IN GOVERNMENT HOSPITALS IN THE MADRAS STATE.

1. *Definitions.*—In these rules—

(i) 'Dean' means the Dean, Government General Hospital and Madras Medical College, Madras.

(ii) 'Director' means the Director of the Barnard Institute of Radiology.

(iii) 'General Hospital' means the Government General Hospital, Madras.

(iv) 'Institute' means the Barnard Institute of Radiology in the Government General Hospital, Madras.

(v) 'K.G. Hospital' means the King George Hospital, Visakhapatnam.

(vi) 'Ophthalmic Hospital' means the Government Ophthalmic Hospital, Madras.

(vii) 'Superintendent' means the Superintendent of the Hospital concerned and includes the 'Dean', unless repugnant to the context.

2. *Stocks of radium—Custody, maintenance, issues and verification.*—(1) Stocks of radium shall be maintained by the Director, and the Superintendents of the King George, Women and Children and Ophthalmic Hospitals. The First Physicist, in the case of the Institute, and the Radiologist of the Hospital, in the case of the King George and Women and Children Hospitals shall be responsible for the safe custody of the stocks in those hospitals and for issues of radium therefrom for treatment, subject to the over-all responsibility of the Director in the case of the Institute and the Superintendents in the other two cases. The Superintendent, Ophthalmic Hospital, shall himself be responsible for the safe custody and issue of radium in his hospital.

(2) Stocks of radium, when not in actual use for treatment or for purposes of research and experiment, shall be stored in safe custody. Such storage shall be in the main safe in the Institute in the case of the General Hospital, and that in the Radiology Department in the case of the King George Hospital. The Superintendents of the Women and Children Hospital and the Ophthalmic Hospital shall make suitable arrangements for the safe custody of the stocks of radium in their hospitals.

(3) The officers responsible for the safe custody and issue of radium referred to in sub-rule (1) above shall maintain the following registers :—

(i) A radium stock register in Form A appended to these rules, showing the quantity of radium in stock, the quantities purchased from time to time and the prices at which they were purchased. Receipts of fresh stocks of radium, issues of needles for re-making or repairs and their receipts back, shall all be entered then and there in the Radium stock register, and attested by the Dean or the Superintendent of the Hospital, as the case may be. In respect of every batch of new needles received or old needles received after re-making, the purity certificates and auto-photographs should invariably be obtained in advance and the receipt of the certificates recorded in the register, after verification of the needles.

(ii) A radium diary in Form B appended to these rules showing particulars of applications received from day to day for issue of radium for treatment.

(iii) A radium issue register in Form C appended to these rules, showing quantities and other particulars of radium issued, the officers to whom and purposes for which it is issued and the quantities, and other particulars (including dates and times) of the radium received back.

(iv) A daily check book in Form D appended to these rules, showing at a glance where every radium container is at any time, and details of the stock of radium strengthwar, with totals in each strength. The number of needles issued or received back, of each strength shall be shown against the name of each patient. The balance in the safe shall also be specified.

(4) The Director in the case of the Institute and the Superintendent of the Hospital in other cases, shall check the contents of the radium safe at least once a month and append a certificate of verification in the stock register. Such periodical check shall be in addition to surprise checks whenever necessary. Whenever the custody of radium in the safe is handed over from one person to another, both shall check the contents of the safe and jointly append a certificate in the stock register. The stock register of the Institute shall be submitted to the Dean for scrutiny after each verification.

(5) Shortly before the close of each official year, the Dean and the Superintendents of the King George, Women and Children and Ophthalmic Hospitals shall verify the actual stock of radium in their hospitals with the stocks as entered in the stock registers and daily check books and forward a certificate of verification, attested by them so as to reach the Surgeon-General not later than the 5th April.

3. *Use of radium and responsibility for radium treatment.*—(1) Radium belonging to the Government shall be used only for giving radium treatment in a Government medical institution, and shall, in no circumstances, be lent for use in private practice. All fees paid in respect of such treatment shall be credited to the Government in full. Radium not belonging to Government shall not be used for treatment in Government hospitals.

NOTE.—Radium treatment shall be given, until further orders, only in the General, Women and Children and Ophthalmic Hospitals in the City of Madras and in the King George Hospital, Visakhapatnam.

(2) Responsibility for radium treatment shall vest in the medical officers administering such treatment, except in the case of the General Hospital. In the General Hospital, the responsibility shall vest as indicated below :—

(*a*) Responsibility for deciding whether a patient should have radium treatment or not, and the lines of such treatment, shall vest in the team of experts consisting of the Surgeon under whom the patient is admitted, the Radio-therapist and the Pathologist.

(*b*) Responsibility for the actual application of radium, in accordance with the lines of treatment decided on, shall vest in the Radio-therapist.

(3) Advice in regard to treatment in hospitals in the city other than the General Hospital shall be given when required by the Radio-therapist of the Institute, and in the King George Hospital, Visakhapatnam, by the Radiologist of that hospital.

4. *Issues of radium—Procedure.*—(1) Subject to the provisions of rule 3 above, applications for the supply of radium for treatment shall be made to the issuing authority (officer-in-charge of the radium), viz., to the First Physicist or the Second Physicist of the Institute as the case may be, by the Radio-therapist in charge of the Radium Ward, in the case of the General Hospital, and to the Radiologist of the Hospital, in the case of the King George and Women and Children Hospitals, and to the Superintendent in the case of the Ophthalmic Hospital, by medical officers not below the rank of Civil Surgeon, Clinical Professor or Clinical Lecturer working in those hospitals, in "Radium request forms" (Form E appended to these rules), at least two days before the date on which the radium is required. In cases of emergency, applications may be sent 24 hours in advance, with an indication of the nature of the emergency. Immediately on receipt of applications, particulars thereof shall be entered in the radium diary referred to in rule 2 (3) (ii).

(2) Stocks of radium, when not in actual use for treatment or for purposes of research and experiment, shall be stored in safe custody. Such storage shall be in the main safe in the Institute in the case of the General Hospital, and that in the Radiology Department in the case of the King George Hospital. The Superintendents of the Women and Children Hospital and the Ophthalmic Hospital shall make suitable arrangements for the safe custody of the stocks of radium in their hospitals.

(3) The officers responsible for the safe custody and issue of radium referred to in sub-rule (1) above shall maintain the following registers :—

(i) A radium stock register in Form A appended to these rules, showing the quantity of radium in stock, the quantities purchased from time to time and the prices at which they were purchased. Receipts of fresh stocks of radium, issues of needles for re-making or repairs and their receipts back, shall all be entered then and there in the Radium stock register, and attested by the Dean or the Superintendent of the Hospital, as the case may be. In respect of every batch of new needles received or old needles received after re-making, the purity certificates and auto-photographs should invariably be obtained in advance and the receipt of the certificates recorded in the register, after verification of the needles.

(ii) A radium diary in Form B appended to these rules showing particulars of applications received from day to day for issue of radium for treatment.

(iii) A radium issue register in Form C appended to these rules, showing quantities and other particulars of radium issued, the officers to whom and purposes for which it is issued and the quantities, and other particulars (including dates and times) of the radium received back.

(iv) A daily check book in Form D appended to these rules, showing at a glance where every radium container is at any time, and details of the stock of radium strengthwar, with totals in each strength. The number of needles issued or received back, of each strength shall be shown against the name of each patient. The balance in the safe shall also be shown.

(4) The Director in the case of the Institute and the Superintendent of the [illegible] other cases, shall check the contents of the radium safe, [illegible] certificate of verification in the safe register, [illegible] surprise checks whenever necessary. [illegible] from one person to another, [illegible] certificates in the safe register. [illegible] the Dean for sending them each [illegible]

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(2) Responsibility for radium such treatment, except in the case ponsibility shall vest as indicated (a) Responsibility for [illegible] and the lines of such treatment under whom the patient is to be (b) Responsibility for [illegible] treatment decided on, shall [illegible] (c) Advice on regarding [illegible] vital shall be given when [illegible] George Hospital, Visakhapatnam [illegible]

4. Issues of radium—[illegible] tions for the supply of radium charge of the radium (hereinafter [illegible] case may be, by the Radiologist) and Children and by the Radiologist, medical officer of the Hospitals, and [illegible] working in these hospitals, [illegible] patient two days before the [illegible] entitled may be sent 24 hours [illegible] Immediately on receipt of [illegible] diary referred to in rule 2 [illegible] (3) (iii).

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(5) Radium received for treatment and no longer required shall be returned without delay by the medical officer who had obtained it or through an officer not below the rank of

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radium daily check book

The radium shall be supplied promptly on receipt of the requisitions. If, for any reason, the radium applied for cannot be issued, the officer applying shall be informed promptly of the date on which the requisition can be met, and unless the requisition is withdrawn, it shall be complied with on that date.

(2) The radium issued shall be delivered personally by a Physicist detailed for the purpose by the Dean in the case of the General Hospital, and by the Radiologist in the case of the King George and Women and Children Hospitals, and by an officer, not below the rank of Civil Assistant Surgeon detailed for the purpose by the Superintendent in the case of the Ophthalmic Hospital.

Delivery shall be made to the Radio-therapist in the case of the General Hospital and to the indenting medical officer in other cases, or to persons authorized in writing by the Radio-therapist or the medical officer, as the case may be, to receive the radium. Before the radium is actually delivered, the officer in charge of the radium shall obtain the signature of the indenting officer or the person authorized in writing by him to receive the radium, in the radium issue register in token of having received the radium. He shall also make the necessary entries in the radium daily check book referred to in rule 2 (3) (iv) immediately after the radium has been issued.

5. *Radium issued for treatment—Custody, maintenance and verification.*—(1) In every hospital in which radium treatment is given, an emergency radium box shall be maintained, in such safe custody, as the Superintendent of the hospital may direct, for the temporary storage of radium in the following cases :—

(i) When the needles are removed on the expiry of the specified period of application when such removal is made at other than working hours ;

(ii) when radium slips out of position during other than working hours and has to be removed and temporarily stored ; and

(iii) when the radium obtained for implantation cannot, for any reason, be used during working hours on the same day.

The radium needles removed during working hours shall be returned direct to the officer in charge of radium and shall not be temporarily lodged in the emergency radium box unless they are required to be re-applied to the same patient.

One key of the box shall be entrusted to the ward sister, or, in her absence, the duty nurse, and the other shall be in the hands of the Resident Medical Officer. The box shall be opened only in the presence of the duty Assistant Surgeon or the Resident Medical Officer or the medical officer who has obtained the radium for treatment. A register in Form G (appended to these rules) shall be kept in the box and whenever radium is taken from or placed back in the box, full particulars of the radium removed or restored shall be entered immediately in the register and attested by the sister or nurse in charge and further attested by the duty Assistant Surgeon or the Resident Medical Officer.

(2) Every medical officer who is issued radium for treatment shall maintain in the ward in which the radium is used, a radium daily check book in Form D-1 appended to these rules. The book shall show the quantity and other particulars of radium in his charge, the date of its receipt, the name of the patient for whose treatment it has been obtained, the date of its return to stock and such other relevant details.

(3) The medical officer shall arrange to insert or apply the radium to the patient immediately on its receipt. If any delay in its application is expected, the procedure outlined in sub-rule (1) of rule 5 shall be followed. When the radium is removed during other than working hours, it shall be entrusted to the Resident Medical Officer or the duty Assistant Surgeon who shall restore it at once to the emergency radium box. The acknowledgment of the Resident Medical Officer or the duty Assistant Surgeon, as the case may be, should be obtained in the daily radium check book when the radium is entrusted to him and similarly acknowledgment for its receipt back from him should also be entered in the book. The book shall be scrutinized daily by the medical officer who obtained the radium for treatment. The ward Assistant Surgeon shall also report daily at 10 a.m. to the Resident Medical Officer the amount of radium in his ward, whereupon the Resident Medical Officer should check the entries in the radium check book and shall satisfy himself as to the proper maintenance of the book, if necessary by tallying it with the register in Form G placed inside the emergency radium box.

(4) In the General Hospital, in partial modification of the provision of sub-rules (2) and (3) above, the Assistant Surgeon in the Cancer Unit shall maintain the radium daily check book in Form D-1 showing the needles in his charge in use against the patients in his ward, and he and the Physicist shall meet every day at 10 a.m. and tally the entries in the Assistant Surgeon's daily check book and those in the daily check book maintained by the Physicist with reference to the provisions of rule 2 (3) above. The Physicist shall append a certificate of verification and correctness of the entries in the ward check book.

(5) Radium received for treatment and no longer required shall be returned without delay by the medical officer who had obtained it or through an officer not below the rank of

Civil Assistant Surgeon, to the issuing authority for storage. The officer returning the radium shall obtain a receipt in Form F appended to these rules acknowledging the return. Radium removed and temporarily stored in the emergency radium box pending return to the officer in charge of radium, shall be returned to that officer with the least practicable delay.

6. *Preparation and application of radium.*—(1) The medical officer who has obtained radium for treatment or any other officer authorized by him, in writing, should alone apply radium or radium mould to a patient.

(2) Application of radium shall be so timed as to obviate its removal and return to stores on a Sunday. If it is necessary to remove, before the appointed time, the radium applied, the provisions of rule 5 (3) or rule 5 (5), as the case may be, shall be followed.

(3) No mercury or iodine solution of any kind shall be placed in contact with a radium container or used on patients to whom radium is to be administered. Tubes and needles shall be sterilized by boiling or by immersion in methylated spirit.

(4) Radium needles are fragile and must be handled carefully and gently, especially when they have to be implanted in Columbia paste moulds. They shall not be held with the fingers or in ordinary types of pressure forceps but by the special radium needle forceps. They shall be inserted by means only of the special introducers.

(5) In addition to knotting each strand of gut at the eye of the needle, each of the pieces of gut attached to the various groups of needles used, shall be knotted together before the whole assembly is fastened with a stitch to the patient's skin. Ligatures attached to the needles shall be counted as soon as all the needles have been put in place, and all the radium needles shall be accounted for at the conclusion of the operation. Any discrepancy shall be reported immediately to the Dean through the Director in the case of the General Hospital, or to the Superintendent in the case of other hospitals.

(6) No radium shall be transferred from one patient to another, direct.

(7) All surface applicators shall be made to the satisfaction and approval of the Radio-therapist. (In the General Hospital, the surface applicators shall be made in the mould room of the Physics Department by the Technician, under the supervision of the Physicists and to the satisfaction and approval of the Radio-therapist.) The mounting of the radium shall be done by the Mould Technician under the immediate supervision of the Physicist as per the physical plan approved by the Radio-therapist. The Physicist shall have the moulds X-rayed and arrange to hand over the mould to the Therapist.

7. *Care of radium applied.*—(1) As soon as the needles have been implanted or inserted and before the patient leaves the operation theatre, the Assistant Surgeon on duty at the operation theatre shall enter in the special register in Form H maintained in the theatre and in the patient's case sheet, the number and strength of the radium needles inserted, and the date and time of insertion. The same particulars shall also be entered on a red luggage label stocks of which shall be maintained in the operation theatre and the label shall be tied to the patient. A red coloured bandage shall also be used over the dressings to indicate that radium is in use on the patient.

(2) Each such patient in whom radium has been inserted or implanted shall then be radiographed immediately, in order to check the position of the needles and to facilitate search for needles, in case they are missed or lost.

(3) The patient shall then be taken by one of the staff nurses of the theatre to the radium ward or to the ward in which radium application cases are accommodated, and handed over with the red luggage label to the staff nurse of the ward. The staff nurse of the ward shall then tie the label to the patient's cot and the label shall remain so tied till all the radium has been removed from the patient. The radiograph of the patient with the needles applied shall also be handed over to the ward nurse, who shall acknowledge the entry of the patient into the ward, with the radium applied to him or her, in the theatre radium register in Form H. The responsibility for the radium shall then pass from the Assistant Surgeon on duty at the theatre to the staff nurse in charge of the ward, subject to the general responsibility of the Assistant Surgeon in charge of the ward.

(4) The Assistant Surgeon in charge of the ward shall make entries in the daily radium check book in Form D-1.

(5) Patients to whom radium treatment is being given shall be kept in radium wards containing (if possible) a radium safe, if such wards have been provided. In other cases, suitable arrangements shall be made to keep them away from other patients, so as to ensure the safety of the radium, and to minimise the number of persons handling the radium and the possibility of loss during transport from one ward to another. Separate arrangements shall also be made for male and female patients. The patients shall not be allowed to leave their respective wards unless they are accompanied by the duty nurse. Visitors shall not be allowed to come near or touch the patients, if there is any danger of their meddling with the radium.

(6) Whenever a patient to whom radium has been applied is dressed, the date on which this is done, together with a record of the number of strands of gut visible, shall be entered in the case sheet by the Assistant Surgeon doing the dressing, the greatest possible care being

aken at such periodical dressings to prevent any loss of the radium. Dressings removed from patients shall be stored and shall be destroyed only after they have been very carefully examined. Such examination shall be made by an officer not below the rank of an Assistant Surgeon in the presence of the sister or nurse on duty, and both shall certify that the examination has been made in accordance with these rules. Where necessary, the dressings shall be preserved for being X-rayed. The nurse on duty shall see that dressings and moulds, etc., from patients to whom radium has been applied are not sent away with the ordinary rubbish, but burnt in the hospital incinerator itself, so that in the event of loss of radium the search for it can be restricted to the hospital premises. In cases where radium has been implanted to the genito-urinary passage or rectum, the nurse on duty shall carefully examine the urine and fæces, before they are disposed of. The duty nurses shall certify in the radium report book in Form I that they have done this work as prescribed in these rules.

(7) In the General Hospital, in partial modification of the provisions of sub-rule (6) above, all dressings of patients undergoing radium treatment shall be preserved until such time as the Physicist has checked them with the radium detector and certified that they do not contain any radio-active substance. The physicist shall attend to this item of work every day at 10 a.m.

8. *Removal of radium applied to patients*—(1) The removal of the radium or the radium mould during or after treatment shall be done only in the presence of the medical officer who has obtained radium for treatment, or the ward Assistant Surgeon under instructions from the medical officer. In every case in which radium is removed, the ward Assistant Surgeon, or the Assistant Surgeon on duty at the theatre, or the Resident Medical Officer, as the case may be, shall make entries in—

(*a*) the theatre register in Form H,
(*b*) the ward radium check book in Form D-1, and
(*c*) the patient's case sheet.

The number of needles removed with their strength shall be entered in the above documents. In the case of the General Hospital, the medical officer or his authorized assistant shall arrange for the dismantling of the radium moulds and cleaning of the needles in his presence with the help of the unskilled staff and then return the needles to the Physicist who shall acknowledge receipt of the same in the daily check book of the ward and bring them on to the stock.

(2) Any defect in the mould irrespective of its nature shall be deemed to be serious and likely to endanger the safety of the needles in it and every attempt shall be made at once to ascertain whether there has been any loss of radium. Whenever there is reason to doubt that there has been any tampering with radium needles implanted or applied, the Director, in the case of the Institute, and the Superintendent of the Hospital, in other cases, shall be immediately informed so that he may order X-ray pictures to be taken.

(3) Every hospital where radium is used shall be provided with a detector used in scientific search for radium. The detector shall be frequently tested to ensure that it is in working order at all times.

(4) Radium containers shall be cleaned in methylated spirit before being returned to the officer in charge of radium. A receipt shall not be issued for the return of improperly cleaned containers. Radium containers shall not be cleaned near sinks, lest they are droped down the sink and get lost.

9. *Radium applied to patients—Responsibility of nursing and medical staff for care of.*—(1) Whenever radium treatment is being given, the Matron shall appoint a special nurse for day duty and one for night duty. The nurse, so appointed, shall be held responsible for the care of the radium, under the instructions of the medical officer who has obtained the radium for treatment. The nurse shall maintain a Nurse's radium report book in Form I appended to these rules. The nurse in charge of a ward containing patients undergoing radium treatment, when relieved, shall hand over the Nurse's radium report book, containing particulars of radium in the ward, to the relieving nurse and both shall sign the report in token of the correctness of the entries.

(2) The Matron or the ward sister, as the case may be, shall check the Nurse's radium report book each morning when taking over her duties and shall sign the book and enter the date in token of scrutiny. The night nurse shall show her radium report book to the Resident Medical Officer on his night rounds. The Resident Medical Officer shall initial the book and append the date in token of his scrutiny.

(3) If any needle slips out of position, a report shall immediately be made by the nurse on duty in the Nurse's radium report book. She shall at the same time communicate with the medical officer in charge of the case or, in his absence, the duty medical officer whatever the hour of the day or night. The medical officer shall at once respond to the call and having taken over the radium shall place it in the emergency radium box. He shall also satisfy himself that the mould or other container is intact and has not been tampered with. If he has any suspicion in the matter, he shall immediately consult the Resident Medical Officer and both officers shall certify whether everything has been found to be correct. The result of the verification shall be noted briefly in the case sheet of the patient and a detailed report of the occurrence shall be included in the duty medical officer's morning report.

(4) The Resident Medical Officer shall assure himself, in the course of his ward rounds, of the efficiency of the bandages, dressings and strappings securing radium.

(5) Medical officers who receive radium for treatment and all those who handle the radium, either in the process of application to patients or removal from patients or otherwise, shall make reasonable arrangements to cover the safety of the radium, at every stage with which they are concerned, and to ensure that a definite person or persons is or are responsible for its custody at any given time.

10. *Loss of radium—Proceedings in the event of.*—(1) In the event of loss of radium, the following procedure shall be followed :—

In the General Hospital, the Director, the Radio-therapist in charge of the case, the Physicist and the Dean (or the Resident Medical Officer in his absence) shall all be immediately informed by the medical officer who suspects any loss In the other hospitals, similarly, information shall be given by the medical officer concerned to the Superintendent or the Resident Medical Officer in the Superintendent's absence, and to the Radiologist of the Hospital.

(2) The medical officer as well as the authorities referred to in sub-rule (1) above informed by him, shall take immediate steps to secure that floors are not swept and furniture, sinks and sluices not disturbed If an X-ray examination of the patient is necessary, the clothes worn by the patient shall be changed before the patient is taken from the ward for such examination and preserved. No dressings or laundry shall leave the ward, nor dust-bins emptied until further instructions are issued by the Dean or the Superintendent of the Hospital. Steps shall also be taken to prevent any rubbish or any dressings from being destroyed or removed from the ward.

(3) The Dean or Superintendent of the Hospital shall at once organize a scientific search for the missing radium. The search will be carried out by the Physicist of the Institute in the case of hospitals in Madras City and by the Radiologist in the King George Hospital, Visakhapatnam. The Physicist of the Institute or the Radiologist, King George Hospital, Visakhapatnam, as the case may be, shall carry out the search as quickly as possible. The Assistant Surgeon in charge of the ward and the nursing staff and all other personnel concerned shall give every possible assistance to the Physicist or the Radiologist, as the case may be, in such a search. At the end of the search, should it prove abortive, the Physicist of the Institute or the Radiologist of the King George Hospital, Visakhapatnam, as the case may be, shall send a report to the Superintendent of the Hospital that all possible ways of detecting the radium were tried and certify that a loss has occurred.

(4) The Dean or the Superintendent, as the case may be, shall notify the first report of loss of the radium to the Police and the Surgeon-General immediately. When the Physicist or Radiologist has certified that any radium should be deemed to have been lost, the Dean, in the case of the General Hospital, and the Superintendent of the Hospital, in other cases, shall notify the loss to the Surgeon-General.

(5) The Surgeon-General shall, thereupon, communicate the information to the Accountant-General and the Government and shall forthwith appoint a Court of Enquiry so that it may hold its first sitting not more than a week after the date of the loss.

(6) The Court of Enquiry shall consist of three officers not in any way connected with the loss, each of them not below the rank of a Civil Surgeon, when officers of such rank are available in the station.

(7) The Court shall make a thorough enquiry as expeditiously as possible, calling for and examining witnesses and taking written statements from all concerned, and submit a detailed report to the Surgeon-General indicating definitely whether the responsibility for the loss should devolve on any particular person or persons, and whether the whole or any part of the value of the radium lost should be recovered from the person or persons concerned.

(8) The report of the Court of Enquiry together with all relevant records shall be forwarded to the Government with the remarks of the Surgeon-General thereon.

(9) The proceedings of the Court and its findings shall be treated as confidential.

## FORM A.

*Radium stock register.*

Denomination (milligram of radium element of radium container) . . . . . .

| Date of receipt of radium. | Number of containers. | Certificate of purity number and date of receipt of certificate. | Certificate of measurement number and date of receipt of certificate. | Mgm. content of each container in mgms. | Total length of each container in mms. | Active length of each container in mms. | Screen age, i.e., filtration in mms. pt. | Incised identification marks on the containers. | Whether silhouted autophotographs were obtained and approved and dates of receipt and approval. | Source of purchase. | Cost. | Remarks. (Comments and dates to be entered when container is lost, damaged or sent for repairs or is received back after repairs). | Total stock. | Signature of officer in charge of radium. | Signature of Superintendent. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |

## FORM B.

*Radium diary.*

| Indent number. | Date of indent. | Name of patient. | Age. | Sex. | Disease. | Details of radium required to be supplied. | Date of receipt of indent by the officer in charge of radium. | Medical Officer in charge of radium treatment. | Date of compliance of the indent. | Initials of the officer in charge of radium after issue. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |

## FORM C.

*Radium issue register.*

| Issue number. | Date and time of issue. | Indent number. | Name of patient. | Age. | Sex. | Disease. | Details of radium issued | Medical Officer in charge of the case. | Signature of the officer who receives the radium. | Details of radium received back after use. | Receipt number. | Date and time of return of radium after use. | Initials of the officer in charge of radium. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |

FORM D.

*Daily radium check book maintained by the officer in charge of radium.*

Government General Hospital (Barnard Institute of Radiology), Madras/Women and Children Hospital, Madras/Ophthalmic Hospital, Madras/King George Hospital, Visakhapatnam.

Return showing where the radium is in use each morning at 10-00 a.m. on day, the 195 .

| Contents of radium containers. Number of radium containers in the main safe with *nil* issued. | Milligrammes of radium element in needles and tubes. | | | | | | | | | | | | | | | Number issued and date of issue. | Number returned and date of return. | Initials of the officer in charge of radium. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0·5 | 0·6 | 0·66 | 1·0 | 1·33 | 2·0 | 2·5 | 3·0 | 5·0 | 6·0 | 6·66 | 10·0 | 12·5 | 13·33 | 15·0 | 25·0 | | | |
| Name of patient for whom radium is issued. Medical Officer in charge of the patient. | | | | | | | | | | | | | | | | | | | |
| Total in use .. | | | | | | | | | | | | | | | | | | | |
| Balance of stock in the main safe .. .. .. .. | | | | | | | | | | | | | | | | | | | |
| Total .. | | | | | | | | | | | | | | | | | | | |

Signature of the officer in charge of radium.

FORM D-1.

*Daily radium check book maintained by the Radium Ward Medical Officer.*

Government General Hospital, Madras/Women and Children Hospital, Madras/Ophthalmic Hospital, Madras/King George Hospital, Vishakapatnam.

Return showing details of radium in use in the Radium Ward at 10-00 a.m. on day, the 195 .

| Contents of radium containers. | Milligrammes of radium element in needles and tubes. | | | | | | | | | | | | | | | Receipt. | Return. | Initials of Ward Medical Officer. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0·5 | 0·6 | 0·66 | 1·0 | 1·33 | 2·0 | 2·5 | 3·0 | 5·0 | 6·0 | 6·66 | 10·0 | 12·5 | 13·33 | 15·0 | 25·0 | | | |
| Name of patient and medical officer in charge of patient. | | | | | | | | | | | | | | | | | | | |
| Total in the ward .. .. | | | | | | | | | | | | | | | | | | | |

Certified that the stock of radium in the ward as entered herein is correct.

Signature of the Ward Medical Officer.

Signature of the officer in charge of radium.

COUNTERFOIL.

FORM E.

*Requisition for supply of radium.*

Indent No.....
Date.....

To

The Officer in charge of Radium,
Barnard Institute of Radiology, Madras
Women and Children Hospital, Madras.
Ophthalmic Hospital, Madras.
King George Hospital, Visakhapatnam.

Sir,

Please arrange to supply the following * radium containers for use on patient..... (Ward).....Age.....Sex.....a case of (diagnosis).....for radium implantation/ mould/cavitary application.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| (1)..... | needles of..... | mgm. | each of total length | ..... | mms. |
| (2)..... | ,, ..... | ,, | ,, | ,, | ..... | ,, |
| (3) ..... | ,, ..... | ,, | ,, | ,, | ..... | ,, |
| (4)..... | ,, ..... | ,, | ,, | ,, | ..... | ,, |
| (5)..... | ,, ..... | ,, | ,, | ,, | ..... | ,, |
| (6)..... | ,, ..... | ,, | ,, | ,, | ..... | ,, |
| Total : | needles | mgms. | | | | |

Date on which radium is required to be supplied.....

Signature of medical officer in charge of the case.

COUNTERFOIL.

FORM F.

*Receipt for the return of radium after use.*

Number :

Date.....
Time.....

Name of patient.....
Medical Officer in charge of patient.....

| | | | | | |
|---|---|---|---|---|---|
| Received..... | needles of..... | mgm. | each total | ..... | mgms. |
| ..... | ,, ..... | ,, | | ..... | ,, |
| ..... | ,, ..... | ,, | | ..... | ,, |
| ..... | ,, ..... | ,, | | ..... | ,, |
| ..... | ,, ..... | ,, | | ..... | ,, |
| ..... | ,, ..... | ,, | | ..... | ,, |
| Total | needles | | Total | | mgms. |

Signature of the officer in charge of radium.

FORM G.

*Particulars of radium in the emergency radium box.*

| Date and time. | Name of patient. | Details of radium deposited in the box. | Depositor's signature. | Signature of staff. | | | Details of radium removed for use or for return. | Signature of person removing radium. | Date and time of removal from the box. | Signature of nurse or sister. | Signature of duty Assistant Surgeon or Resident or Medical Officer. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day nurse. | Night nurse. | Night Superintendent. | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |

FORM H.

*Radium—Details of radium in application on patients.*

| Date and time of application. | Name of patient. | Details of radium (number of needles and strength) implanted or in the mould. | Signature of the Assistant Surgeon. | Details of radiographs, date, number, region, etc. | Signature of staff. | | Details of radium removed and by whom. | Date and time of return to the officer in charge of radium. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Day nurse. | Night nurse. | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |

FORM I.

*Nurses' radium report book.*

.....day, the.....195....

| Bed number. | Name of patient with radium. | Details of radium (i.e. number of needles and strength). | Remarks, such as any whether radium is slipping out, etc. | Signature of the nurse who is handing over. | Signature of the nurse who is taking over. | Initials of Matron or ward sister after scrutiny. | Initials of Resident Medical Officer during night rounds. |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |

Certified that all the dressings, urine and faeces, etc., of patients having radium have this day been carefully examined by me in accordance with the rules.

*Duty Nurse.*

(True Copy)

One
10.10.86

R. Nilagiriappa
25.10.86
Superintendent
Madras Record office